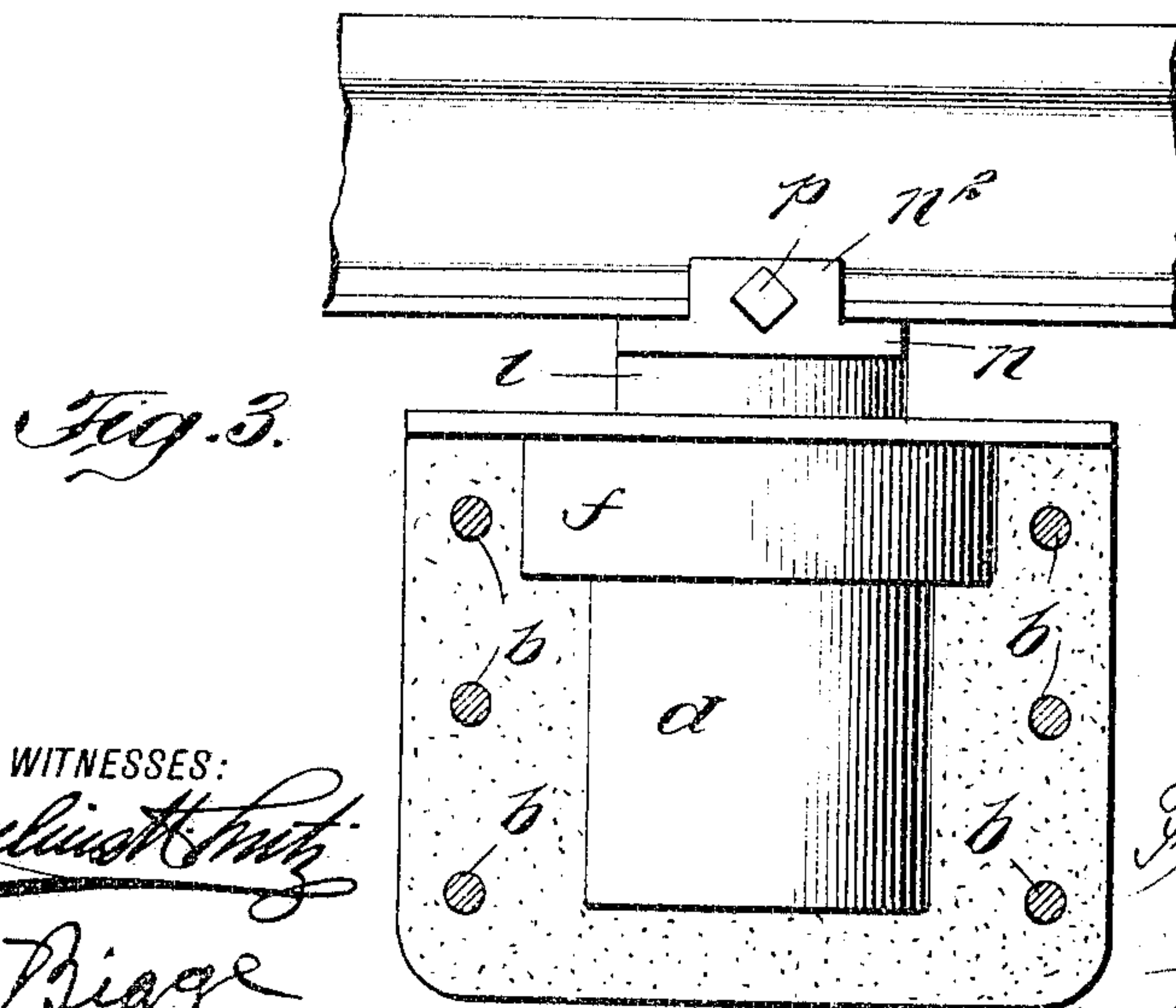
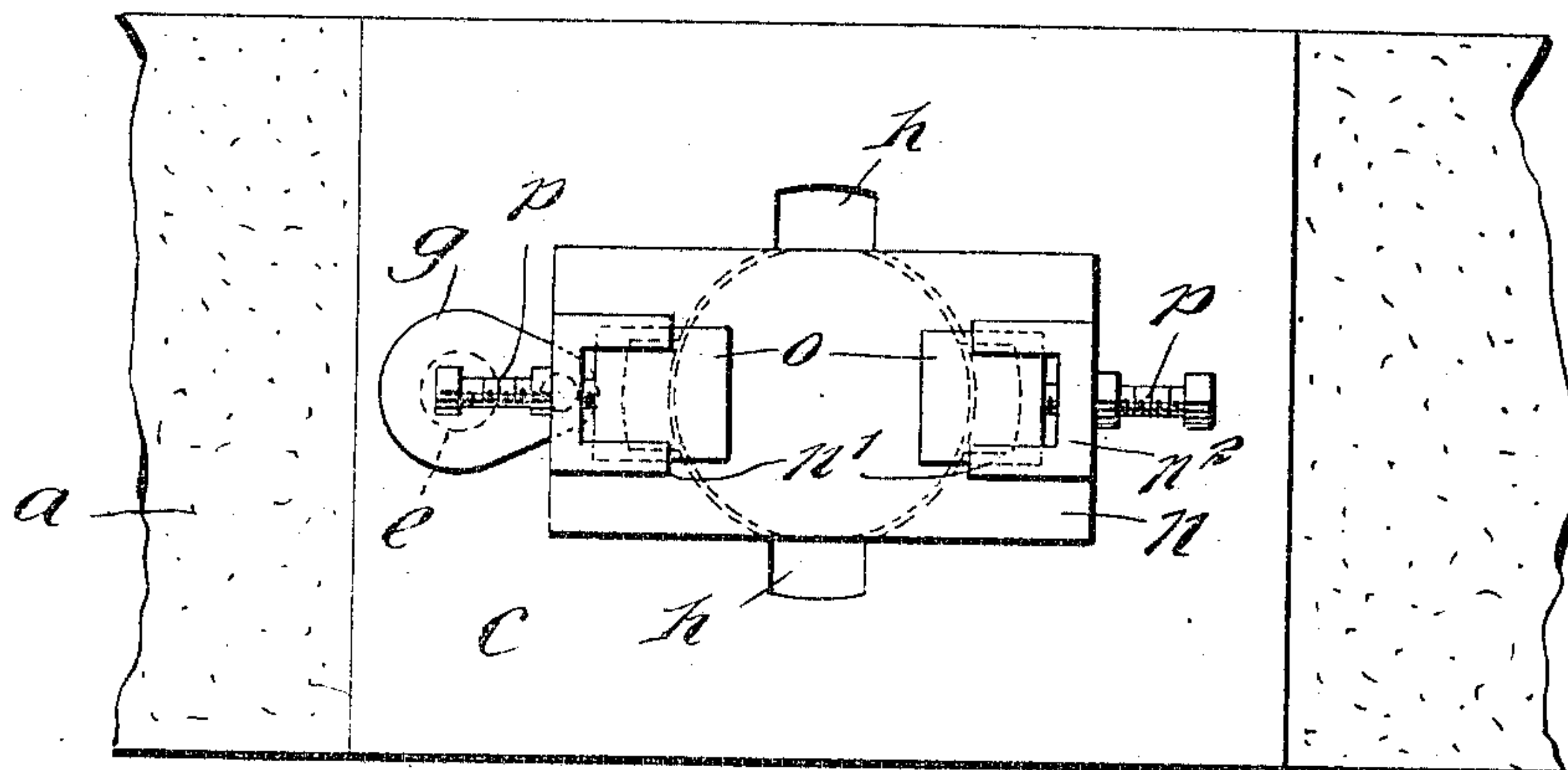
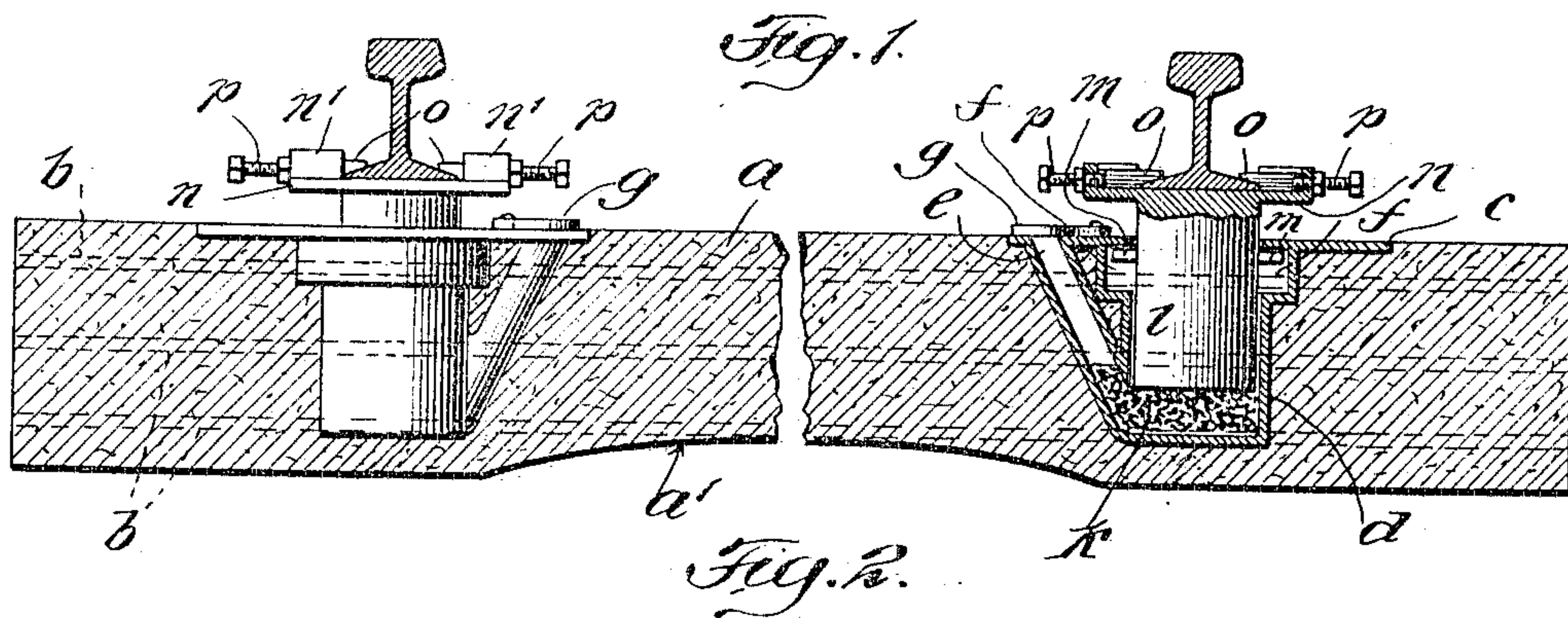


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RAILWAY TIE.  
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956,045.

Patented Apr. 26, 1910.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

FRANK E. DAVIDSON, OF CEDARHURST, NEW YORK.

## RAILWAY-TIE.

956,045.

Specification of Letters Patent. Patented Apr. 26, 1910.

Application filed September 3, 1909. Serial No. 516,061.

*To all whom it may concern:*

Be it known that I, FRANK E. DAVIDSON, of Cedarhurst, Nassau county, State of New York, have invented new and useful Improvements in Railway-Ties, of which the following is a full, clear, and exact specification, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a reinforced concrete railway tie and its special object is to improve the devices for mounting the rail on the tie in such a manner that the rail will be securely held and yet permitted to give vertically and present a somewhat yielding support for the traffic.

The invention involves other features of importance all of which will be fully set forth hereinafter and particularly pointed out in the claims.

In the drawings:—Figure 1 is a longitudinal section of the tie; Fig. 2 is an enlarged plan-view of one end of the same; and Fig. 3 is a side-elevation of the rail support.

The body *a* of the tie is formed of a concrete mixture molded in the requisite shape and dimensions and having embedded therein iron reinforce bars *b* which may be disposed in any desired manner. As shown in Fig. 1, the tie has its middle and bottom surface arched upward as indicated at *a'*, so that the end portions alone bear on the ballast or roadbed, thus relieving the tie from bending strains and reducing the liability to breakage.

In each end of the tie under the positions occupied by the rails an iron or other metal casting is embedded. This casting comprises a face-plate *c*, which lies flush with the upper surface of the tie, a cylindrical body portion *d*, a duct *e* leading from the face-plate *c* to the base of the body and an enlarged undercut chamber *f* produced by extending outward the walls of the body *d*. The duct *e* is adapted to be closed by a cover *g* which is mounted to swing horizontally on the face-plate *c* so that access may be had to the duct at will. The face-plate *c* is provided with opposite notches *h* communicating with the enlarged chamber *f*, the purpose of which will hereinafter appear.

The chamber *d* is adapted to be filled with granular cork or some other elastic or semi-elastic substance. This is indicated at *k* in the drawings. The duct *e* is provided to admit of filling the chamber whenever it be-

comes necessary to replenish the supply. For this purpose the cover *g* is moved aside and after the cork is in place the cover may be moved back to close the duct. Movable vertically in the chamber *d* is a plunger *l*, which bears on the cork and is supported thereby. Said plunger has two lugs *m* projecting oppositely therefrom. These lie in the enlargement *f* of the cylinder or body *d* and serve to limit the vertical motion of the plunger. In introducing the plunger into position the lugs are moved through the notches *h* and then the plunger is given a one-quarter turn causing the lugs to lie out of registry with the notches and prevent accidental displacement of the plunger.

At its upper end the plunger carries the device for fastening the rail thereon. These consist in lugs or arms *n* projecting oppositely from the upper surface of the plunger and lying at the opposite sides of the rail. Said lugs or arms *n* have guideways *n'* formed thereon which are undercut to carry the clamps *o* in such a manner that the clamps may move toward and from the rail, said clamps overhanging the base of the rail and holding the rail in place and they are held in position by means of screws *p* which are threaded in flanges *n''* formed on the arms *n*.

By means of my invention an indestructible tie is provided. The stationary portion of the rail-fastening is embedded as a permanent rigid part of the tie and furnishes a seat for the yielding plunger on which the tie is mounted. In this manner the rail is held with the utmost security and is permitted to yield vertically only so that a cushion is afforded for the traffic. The cork or other yielding substance *k* may be replaced at any time by the simple operation of opening the duct *e* and charging the chamber *d* through said duct.

Having thus described my invention what I claim as new and desire to secure by Letters Patent of the United States, is:

1. A concrete railway tie having a chambered part embedded therein and a rail supporting part yieldable vertically in the first-named part and means on one of said parts for engaging the other part for limiting the motion of the rail supporting part.

2. A concrete railway tie having a vertically yielding rail supporting part, clamps guided thereon and means for pressing the clamps against the base of the rail.

3. A concrete railway tie having a cylindrical socket, a cylindrical rail supporting part mounted therein and yieldable vertically and means whereby the rotation of  
5 said supporting part through a portion of a revolution locks the part against vertical removal from the tie.

4. A concrete railway tie having a socket embedded therein and provided with recesses  
0 upon opposite sides thereof adjacent the upper end and a rail supporting part within said socket and means whereby the relative rotation of the socket and said parts locks the part against vertical removal.

5. A concrete railway tie having a cylin-

drical chamber, a cylindrical rail supporting part mounted therein and yieldable in respect thereto, means for connecting said part to the rail to prevent rotation of the part and means controlled by a rotation of 20 said part for locking said part within the chamber.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK E. DAVIDSON.

Witnesses;

ISAAC B. OWENS,  
B. BIGGE.